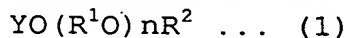


CLAIMS

1. A cement admixture comprising three components of a copolymer (A), an unsaturated (poly)alkylene glycol ether monomer (a) and a non-polymerizable (poly)alkylene glycol (B) having no alkenyl group at ratios of the unsaturated (poly)alkylene glycol ether monomer (a) to the copolymer (A) in a range of 1 to 100% by mass and the non-polymerizable (poly)alkylene glycol (B) having no alkenyl group to the copolymer (A) in a range of 1 to 50% by mass,

wherein the copolymer (A) contains a constituent unit (I) derived from the unsaturated (poly)alkylene glycol ether monomer (a) and a constituent unit (II) derived from a maleic acid monomer (b) at ratios of the constituent unit (I) and the constituent unit (II) in a range of 1% by mass or more, respectively, in the entire constituent units,

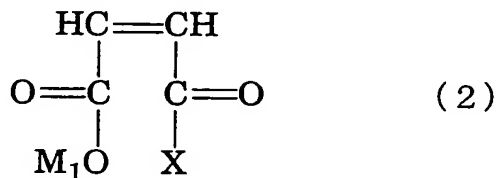
and the unsaturated (poly)alkylene glycol ether monomer (a) is represented by the general formula (1):



(wherein Y represents an alkenyl group containing 2 to 4 carbon atoms, R^2 represents a hydrogen atom or a hydrocarbon group containing 1 to 30 carbon atoms, R^1O represents one or more species of oxyalkylene groups containing 2 to 18 carbon atoms, and n represents the average molar number of addition of the oxyalkylene groups and is a number of 1 to 500).

2. The cement admixture according to Claim 1,

wherein the maleic acid monomer (b) is represented by the general formula (2):



(wherein X represents $-\text{OM}_2$ or $-\text{Z}-(\text{R}^3\text{O})_q\text{R}^4$, M_1 and M_2 may be the same or different and each represents a hydrogen atom, a

monovalent metal, a divalent metal, an ammonium group or an organic ammonium group, -Z- represents -O- or -NH-, R^3O represents one or more species of oxyalkylene groups containing 2 to 18 carbon atoms, R^4 represents a hydrogen atom, an alkyl group containing 1 to 30 carbon atoms, a phenyl group, an aminoalkyl group, an alkylphenyl group or a hydroxyalkyl group (the number of carbon atoms of the alkyl groups in the aminoalkyl group, the alkylphenyl group and the hydroxyalkyl group is 1 to 30), q represents the average molar number of addition of the oxyalkylene groups and is a number of 0 to 500, provided that the compound includes those having acid anhydride group (-CO-O-CO-) formed by bond of oxygen bonded to M_1 with carbon bonded to X, in which M_1 and X do not exist).

3. The cement admixture according to Claim 1, wherein the oxyalkylene group composing the non-polymerizable (poly)alkylene glycol (B) having no alkenyl group is one or more species of oxyalkylene groups containing 2 to 18 carbon atoms, and the terminal group of the non-polymerizable (poly)alkylene glycol (B) having no alkenyl group is a hydrogen atom, an alkyl group or an (alkyl)phenyl group containing 1 to 30 carbon atoms.

4. The cement admixture according to Claim 2, wherein the oxyalkylene group composing the non-polymerizable (poly)alkylene glycol (B) having no alkenyl group is one or more species of oxyalkylene groups containing 2 to 18 carbon atoms, and the terminal group of the non-polymerizable (poly)alkylene glycol (B) having no alkenyl group is a hydrogen atom, an alkyl group or an (alkyl)phenyl group containing 1 to 30 carbon atoms.

5. The cement admixture according to Claim 1, further comprising at least one additive selected from the group consisting of (C1) a setting accelerator, (C2) at least

one compound selected from oxycarboxylic acid, its salt, saccharide, and sugar alcohol, and (C3) a sulfonic acid type dispersant containing a sulfonic acid group in the molecule.

5 6. The cement admixture according to Claim 2,
 further comprising at least one additive selected from
the group consisting of (C1) a setting accelerator, (C2) at least
one compound selected from oxycarboxylic acid, its salt,
saccharide, and sugar alcohol, and (C3) a sulfonic acid type
10 dispersant containing a sulfonic acid group in the molecule.

 7. The cement admixture according to Claim 3,
further comprising at least one additive selected from the group
consisting of (C1) a setting accelerator, (C2) at least one
15 compound selected from oxycarboxylic acid, its salt, saccharide,
and sugar alcohol, and (C3) a sulfonic acid type dispersant
containing a sulfonic acid group in the molecule.

 8. The cement admixture according to Claim 4,
20 further comprising at least one additive selected from the group
consisting of (C1) a setting accelerator, (C2) at least one
compound selected from oxycarboxylic acid, its salt, saccharide,
and sugar alcohol, and (C3) a sulfonic acid type dispersant
containing a sulfonic acid group in the molecule.

25 9. The cement admixture according to Claim 5,
 wherein the sulfonic acid type dispersant (C3) containing
a sulfonic acid group in the molecule is a compound having an
aromatic group.

30 10. The cement admixture according to Claim 6,
 wherein the sulfonic acid type dispersant (C3) containing
a sulfonic acid group in the molecule is a compound having an
aromatic group.

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11. The cement admixture according to Claim 7,
wherein the sulfonic acid type dispersant (C3) containing
a sulfonic acid group in the molecule is a compound having an
aromatic group.

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12. The cement admixture according to Claim 8,
wherein the sulfonic acid type dispersant (C3) containing
a sulfonic acid group in the molecule is a compound having an
aromatic group.

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13. A cement composition comprising the cement admixture
according to Claim 1, cement and water.

14. A cement composition comprising the cement admixture
according to Claim 2, cement and water.

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15. A method for producing a cement hardened product,
comprising:

executing a cement composition comprising the cement
admixture according to Claim 1 containing a setting accelerator
(C1), cement and water; and

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hardening the cement composition at a temperature
condition of 30°C or less.

16. A method for producing a cement hardened product,
comprising:

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executing a cement composition comprising the cement
admixture according to Claim 2 containing a setting accelerator
(C1), cement and water; and

hardening the cement composition at a temperature
condition of 30°C or less.

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17. A method for executing a cement composition
comprising:

executing the cement composition comprising the cement

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admixture according to Claim 1 containing at least one compound (C2) selected from oxycarboxylic acid, its salt, saccharide, and sugar alcohol, cement and water at a temperature condition of 20°C or more.

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18. A method for executing a cement composition comprising:

executing the cement composition comprising the cement admixture according to Claim 2 containing at least one compound
10 (C2) selected from oxycarboxylic acid, its salt, saccharide, and sugar alcohol, cement and water at a temperature condition of 20°C or more.

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